PAT-NO: JP407161356A
DOCUMENT-IDENTIFIER: JP 07161356 A
TITLE: ALKALINE BATTERY
PUBN-DATE: June 23, 1995

INVENTOR-INFORMATION:

NAME	COUNTRY
TSUTSUI, KIYOHIDE	
IZUMI, AKIHIDE	
NISHIO, MASATAKE	
NISHIDA, KUNIYOSHI	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
FUJI ELELCTROCHEM CO LTD	N/A

APPL-NO: JP05310141
APPL-DATE: December 10, 1993

INT-CL (IPC): H01M004/42 , H01M010/24

ABSTRACT:

PURPOSE: To improve discharge characteristics of non-amalgamated alkaline battery using zinc alloy powder as a negative pole active material by setting in a specified range, bulk density of zinc alloy powder, in which no mercury is contained but small amount of more than one of specified alloy elements are added.

CONSTITUTION: An alkaline battery which is composed of zinc alloy, in which small amounts of more than one kind of lead, indium, alminium, gallium, tin, calcium, magnesium, bismuth, lithium, sodium, etc., are added but no mercury is contained, and formed by using the powder within the range of bulk density of 2.2-2.6g/cm3 as a negative electrode active material, expresses favorable discharge characteristic ever under a low temperature. Zinc alloy power having small bulk density has a large surface area per volume. Therefore reactivity in electrolyte is improved, reactivity continues even if discharging under a low temperature, utilization rate of active material is improved, and large discharge capacity is exhibited.

PAT-NO: JP410032002A

DOCUMENT-IDENTIFIER: JP 10032002 A

TITLE: NEGATIVE ELECTRODE ZINC ALLOY POWDER FOR ALKALINE STORAGE BATTERY

PUBN-DATE: February 3, 1998

INVENTOR-INFORMATION:

NAME	COUNTRY
YASUMURA, TAKAAKI	
TSUTSUI, KIYOHIDE	
NAKAGAWA, YOSHITERU	
NOZUE, TOMOHISA	
MATSUI, KAZUO	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
FUJI ELELCTROCHEM CO LTD	N/A

APPL-NO: JP08183651

APPL-DATE: July 12, 1996

INT-CL (IPC): H01M004/42 , C22C018/00

ABSTRACT:

PROBLEM TO BE SOLVED: To reduce the apparent specific gravity of a zinc allot powder, so a. to improve the discharge performance of an alkaline storage battery using this alloy powder, by adding 0.003 to 0.7wt.% of only zirconium practically to a pure zinc.

SOLUTION: The zirconium within a range of 0.003 to 0.7wt.% is added to a pure zinc ground metal with a zinc purity of more than 99.9986, so as to produce a zinc alloy powder by using a gas atomizing method, for example. The apparent specific gravity of this alloy powder is made 0.5 to 2.4g/cm3, preferably. The discharge sustaining time of an alkaline storage battery in which a gel form substance made by mixing the above zinc alloy powder, a 40% KOH solution containing a saturated ZnO, and a gelling agent, is used as the negative electrode active material, is made longer than a conventional one. That is, since the appant specific gravity of the zinc alloy powder is low, the specific surface area is made larger, the contacts between the reaction area and alloy particles are increased, and a high discharge utilizing ratio is obtained. Consequently, it contributes also to a low cost of the battery.

PAT-NO: JP404284357A
DOCUMENT-IDENTIFIER: JP 04284357 A
TITLE: ZINC ALKALINE BATTERY
PUBN-DATE: October 8, 1992

INVENTOR-INFORMATION:

NAME	COUNTRY
TADA, KINYA	
KURIMURA, MASAAKI	
YANO, MUTSUMI	
MIENO, EIICHIRO	
SEKIGUCHI, WATARU	
NAKAGAWA, JUNZO	
AKAZAWA, TAKANORI	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
SANYO ELECTRIC CO LTD	N/A
SANYO EXCEL KK	N/A
TOHO AEN KK	N/A

APPL-NO: JP03072336
APPL-DATE: March 12, 1991

INT-CL (IPC): H01M004/42 , B22F001/00 , B22F001/02 , H01M004/24

ABSTRACT:

PURPOSE: To prevent the deterioration of corrosion resistance and discharge performance as a battery even making zinc alloy powder non-amalgamated by using the zinc alloy powder, in which indium is added on its surface and bulk specific gravity is adjusted, as a cathode active material.

CONSTITUTION: Mercury-free zinc alloy powder, in which a given quantity of indium is added on its surface and bulk specific gravity is made 0.29-3.50(g/cm2), is used as a cathode active material of a zinc alkaline battery. This improves discharge performance with hydrogen overvoltage on the zinc alloy powder surface increased to restrain gas generation due to corrosion during preservation as a battery, and also with contact among zinc alloy powder particles bettered. A preferable range is 0.05-0.80wt.% for an indium addition ratio, 0.01-0.10wt.% for lead, 0.005-0.05wt.% for bismuth, and 0.01-0.05wt.% for aluminum. This can obtain a battery, having excellent corrosion resistance and discharge performance as the battery, regardless of containing no mercury.

183 **Having threaded compression means:**

This subclass is indented under subclass 181.
Apparatus wherein the terminal has a threaded compression means.

184 **Sealing mass or compound:**

This subclass is indented under subclass 181.
Apparatus wherein the seal includes a sealing mass or compound which, at some stage of battery manufacture, said mass or compound was in a fluid or bulk form.

185 **Having seal feature:**

This subclass is indented under subclass 163.
Apparatus having means preventing either the egress or ingress of a fluid.

186 **Having cell assembly support feature:**

This subclass is indented under subclass 163.
Apparatus having means to support a cell assembly.

187 **Having handle or lifting device:**

This subclass is indented under subclass 163.
Apparatus having means facilitating the manipulation of the cell, i.e., a handle or lifting means, etc.

188 **Include electrolyte chemically specified and method:**

This subclass is indented under subclass 122.
Apparatus having materials which function as an electrolyte and are chemically specified. Included also are the materials, per se.

SEE OR SEARCH THIS CLASS, SUBCLASS:

29, 33 and 46, for electrolyte materials having utility in fuel cells, and subclass 112 for fused salt or molten electrolyte materials.

SEE OR SEARCH CLASS:

252, Compositions, 62.2 for electrolyte compositions for electrical